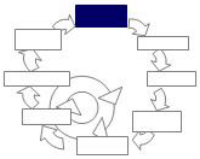


I. Collecting and Analyzing Student Data

The professional development process must ensure that teachers have adequate opportunities to learn and implement new curricula, instructional strategies, and assessments. Teachers need to have sufficient workshop and workplace supports to develop a deep understanding of the theory of the strategy/model they are learning. Professional development design will build in time for teachers to learn together and to collaborate with each other. *If teachers have opportunities to learn new content and implement it in their classrooms, the investment in professional development will pay off in increased student learning.*

A. Overview of the Component

Many sources of data are appropriate for decision-making about needed staff development. The key to data collection, however, is a focus on the students in a classroom, school, district, and/or state.

Collecting Student Skills Data

Data can be divided into roughly two categories: those data that indicate the status of skill development in areas of concern and those data that explore hypotheses to explain that status.

Standardized tests of reading, math and science, such as the ITBS and the ITED, are indicators of the status of skill development; they provide a measure of a student's current levels of understanding and proficiency with respect to same-grade comparison groups at a school, district, state or national level. When data are being examined to determine the current status of student skill and knowledge on the district content standards, it is critical that (1) district administrative personnel make available to principals data on their specific schools and (2) principals make available to teachers data on their specific students. Other examples of tests of student skill development include the diagnostic tests used by many K-3 teachers to determine mastery of beginning reading skills, criterion-referenced tests developed by many districts to measure the extent to which students are meeting the content standards of the curriculum; and teacher-made tests that examine the mastery of specific learning objectives. The following types of data explore hypotheses to account for current levels of student skill, understanding and proficiency.

- Information about students' individual characteristics; such as:
  - Hearing and vision acuity
  - Sleep and nutrition patterns
  - Indicators of abuse and/or drug use
  - Attention disorders and learning disabilities
- Information about the professional staff responsible for students' learning, such as the staff's:
  - Teacher preparation and credentialing
  - Expectations of high achievement levels for **all** students
  - Attitudes toward diverse social and ethnic groups

- Information about the school and home environments (e.g., leadership's vision for student growth and clarity with respect to means and ends, the presence or absence of collegial norms, attitudes toward and quality of professional development programs, socioeconomic status, number of migrant families, etc.).

Data about the implementation of current programs also fit into this category. For example, if a district has adopted a math curriculum that appears not to be affecting student math skills, it is important to examine the actual level of implementation of the program before discarding the investment in materials and training.

The types of data collected to explore possible explanations for student learning, or lack of learning, are extremely diverse and are indicative of the beliefs of professionals in the workplace as well as the history and norms of individual schools, districts and communities.

Multiple Stakeholders Involved

Because the CSIP process involves multiple stakeholders (e.g., teachers, administrators, parents, community members, etc.) in the analysis of data to determine student need, it is critical to the entire improvement process that data be classified and shared in ways that are clear for both education professionals and the public. The added benefit from broad participation at the data analysis and goal setting stages is the building of a shared understanding of educators' needs for continuous learning aimed at addressing student learning needs.

Analyzing Data

Districts/schools that are collecting data on student learning in order to set goals for improved student achievement and make decisions about professional development that will advance them toward those goals have many options available to them. In studying data, it is important to look for **patterns** and frequencies of phenomena. As part of the CSIP process, all schools/districts will need to collect the first type of data – current levels of student skill development – to determine the current achievement patterns of their students and implications for needed improvements. Are subgroups of racial, ethnic, socioeconomic status (SES), limited English proficient (LEP), gender, and individualized education program (IEP) populations being equally well served by current educational programs? Are reading comprehension or math problem-solving difficulties distributed across a broad range of students or do problems cluster in subgroups? What percentage of the total student population and of each subgroup are meeting the expectations laid out in district standards and benchmarks? Do scores vary markedly between teachers or grade levels?

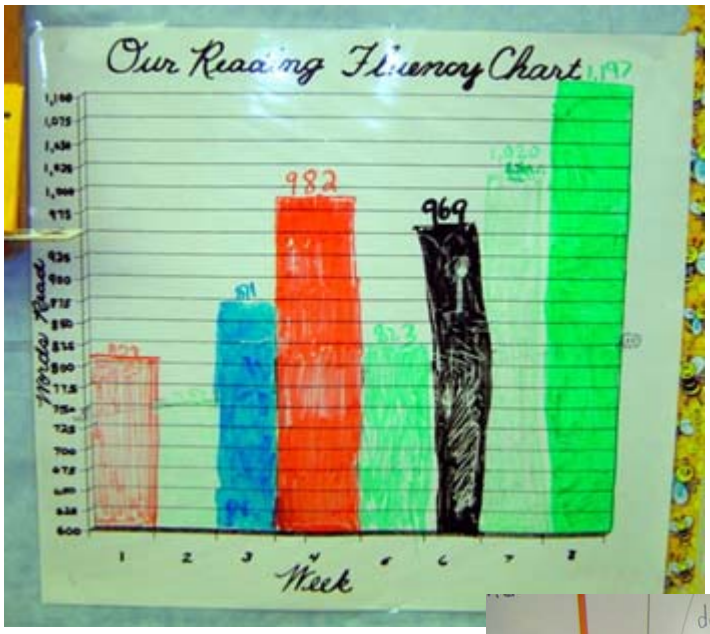
It is from these data that goals for student learning are formulated, so it is critical that schools have sufficient data and examine it in enough depth to determine the current levels of student proficiency in the basic subjects.

Districts/schools will also need to examine data with the *potential to explain* the student needs identified. Two sources of data are good starting points because of their explanatory power –the current curricular, instructional and assessment programs being used and research about successful programs.

Current Curricular, Instructional and Assessment Programs. In settings that serve large numbers of students living in poverty, information about the nutrition and health status of students should help education professionals ameliorate conditions that could depress or prevent students' abilities to profit from quality instructional programs. All districts should examine their dropout data to determine how many of their students fail to complete high school and who those

students are. Data on school climate can identify levels of expectation for student learning, the presence or absence of collaborative structures, and the understanding of school and district goals for student achievement. Often, areas of concern raised by these types of data can be addressed in conjunction with or in support of the district's and/or school's main improvement agenda.

Examination of multiple sources of data will enable schools and districts to determine the current status of student learning, identify needs for improvement, and provide avenues to explore to advance long-range and annual improvement. The concept of simultaneity is extremely important at this stage – as goals are set and content selected for staff development that will advance the district/school toward its student achievement goals, multiple sources of data may indicate that poor math skills require modifications in the standards and benchmarks, new teaching strategies that put that curriculum within the reach of students, and the introduction of collaborative structures that enable teachers to begin the process of collectively working toward a shared goal.



B. Operating Principles – Collecting & Analyzing Student Data

The Model's Operating Principles describe actions and priorities that are essential for the ongoing sustained implementation of professional development at the district, building, and classroom level. Attention to these Operating Principles occurs as needed throughout the cycle of professional development.

Operating Principles
√ Focus on Curriculum, Instruction and Assessment
√ Participative Decision-making (School & District)
√ Leadership
√ Simultaneity

Actions Associated with Three Operating Principles

The actions listed below are examples of how the four Operating Principles may be applied to support the collection and analysis of student data:

Focus on Curriculum, Instruction and Assessment

- Assessments are aligned with instruction and curriculum.
- The accountability systems in place clearly focus on instruction and inform decisions pertaining to curriculum, assessment, and instructional practices.
- Efforts are made to reduce time consuming data collection procedures that don't inform instructional decisions.

Participative Decision-making

- A leadership team with teacher and administrator representation plays an active role in collecting, organizing, analyzing, and discussing data.
- Routines are established for regularly scheduled opportunities for all staff to discuss classroom, building, and district level student data.
- Data driven leadership (DDL) or some other process is used to assist the faculty in generating questions, organizing, and displaying data to support decisions making

Leadership

- Principals routinely and publicly use data to make decisions (modeling the use of data to establish building-wide norms of inquiry).
- Each staff meeting includes discussion of student performance and analysis of data.

Simultaneity

- Use multiple sources of data to ensure decisions made at the district and building levels prevent fragmentation.
- The study of data assists district leaders in setting professional development targets that will advance the district/school toward its student achievement goals.

Common Pitfalls When Collecting and Analyzing Student Data

- Only a few administrators and teachers work with data.
- Staff receives summary data statements, and never studies actual district, building, and classroom data.
- School staff members cannot select professional development content directed at specific student learning needs because item analysis data are not studied.

C. Steps to Consider – Collecting & Analyzing Student Data

The following steps are offered as a suggested guide to help local districts collect and analyze student data for planning professional development. The professional development planning process will not always follow a linear sequence, so the sequence below is not critical. The Tools and Resources suggested for each step are available in the Part 4.

- ❑ **Generate questions to study student needs:**

  PD Provider facilitates discussion and coaches at district level to generate specific questions to ask of data.

  PD Leadership Team facilitates discussion by all teachers at each building to generate specific questions to ask of data.

In Part 4, Tools and Resources

2(data).1. Generate Questions to Study Student Needs:
a. Sample Q's to Ask of Data
b. QIC Decide Tool
c. What We Need to Know about Our Students

2(data).2. Where to Find Answers to our Questions

- ❑ **Collect data to answer questions:** Identify and document data already collected in the district to answer the questions generated;

  Analyze and display data; Use data analysis tools (e.g. EXCEL pivot tables) to review how various groups and subgroups are performing on various assessments. Summarize findings.

2(data).3. How to Find Answers for the Sample Questions

2(data).4. Iowa Public Schools: Comprehensive Student Assessment System

2(data).5. Organize and Analyze Data

- ❑ **Conduct item analysis of ITBS/ITEDS and other District assessments:** Generate areas of strengths and areas of weakness for each grade level and sub-group. Develop data display.

2(data).6. ITBS Item Analysis Summary

- ❑ **Organize answers to questions and facilitate building-level meetings with all faculty:**
  - Review questions and answers collected to date
  - Generate new questions that emerge from data analysis
  - Consider additional sources of data
  - Focus discussions on student learning, and set high expectations that all students can learn.

2(data).7. Additional Measures

2(data).8. Analyzing & Reporting Our Data – Response Sheet

- ❑ **Consider the Operating Principles and identify actions to support data collection and analysis.**
- ❑ **Record Summary of Data Analysis in the CSIP**

2(data).9. Operating Principles for Collecting/Analyzing Data

3stan1. CSIP Constant Conversation Question #1*

* Also http://www.state.ia.us/educate/ecese/asis/csi/documents.html